

EWG OPS-SC Meeting

Standard Definition for: CDA Procedure (Technique)

Presented to: EWG OPS-SC @ NASA Ames Res. Cntr

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**Federal Aviation
Administration**



CDA Workshop Proposal

At CDA Workshop #2 in Atlanta, GA on 18-19 April 2006, the last revision by the EIPT Ops Panel of a CDA definition was:

- ***CDA is a flight procedure where the vertical profile of an arrival has been optimized, not to include “step downs” or intermediate level flight operations, so that it can be flown from a high altitude in an “idle” engine (low power) condition until a stabilization point prior to touch down on the runway, i.e. Standard Terminal Arrival (STAR) with an optimized vertical profile.***



ICAO Working Group 2

Task Group 3 on Operational Procedures

- PANS-ABC material related to CDA

Abbreviation:

- CDA Continuous Descent Approach

Definition:

- **Continuous Descent Approach: *a flight technique aiming to minimise noise immersion on the ground, fuel burn and emission through the use of minimum engine thrust, minimum drag and a continuous descent.***



FAA ATO-R

STAR Order 7100 Update:

Abbreviation:

CDA Continuous Descent Arrival. May also be referred to as a Continuous Descent Approach or a **Continuous Descent Angle**. A procedure with an optimized descent profile that minimizes level off segments.

Discussion:

(2) Continuous Descent Arrival (CDA) Idle Thrust Profiles. Although many existing procedures already provide benefit from optimized vertical profiles, the use of computer modeling and advanced simulation tools makes possible the refined development of location specific procedures designed to minimize level flight segments and allow maximum use of idle thrust from top of descent in the en route environment to the near-runway environment. The development of vertical profiles for new procedures and the refinement of existing vertical profiles will benefit from use of location-specific modeling. Until a general use tool is available for procedures designers, access to the modeling and simulation resources and assistance in developing CDA procedures may be coordinated through the RNAV/RNP Group.

Note:

The FAA has developed an initiative to work with several airports to implement CDA procedures for night operations. Facilities are strongly encouraged to seek opportunities to develop optimized descent profile procedures for nighttime and other low density traffic operations in support of this initiative.



MITRE –CDA Assessment Task

Definition:

Continuous Descent Arrival: *an arrival where an aircraft is cleared to descend from cruise altitude to final approach using a best-economy power setting (usually identified as flight idle thrust) at all times. Such an arrival is continuously descending, except for the provision of momentary level segments used to slow aircraft without need to change thrust settings (e.g., to meet the 250 knot restriction at 10,000 feet altitude). At final approach, thrust may be added to permit a safe, stabilized approach speed and flap configuration down a glideslope to the runway.*



FAA RECOMMENDATION

FAA recommends that the following definition of CDA for consideration by the EWG OPS-SC for standard use:

Definition:

- **Continuous Descent Arrival:** *an arrival flight procedure (technique) where an aircraft is cleared to descend from cruise or an intermediate altitude until established on a stabilized approach using a best-economy power setting (maximizing the use of flight idle thrust) at all times. Such an arrival is continuously descending, except for the provision to utilize **momentary shallow segments** to slow aircraft without the need to change thrust settings (e.g., to meet the 250 knot restriction at 10,000 feet altitude). At final approach, thrust may be added to permit a safe, stabilized approach speed and flap configuration down a glide slope to the runway.*
- **Note:** This does not specify how the trajectory is defined, coordinated and utilized to perform a CDA. This is reflected in the numerous configuration that exist (see Appendix for Ranges of configurations). These will require further clarification and definition after agreement of the basic CDA concept understanding.



EWG OPS-SC

Draft DEFINITION

Definition:

- Continuous Descent Arrival: *an arrival flight technique that follows a profile where an aircraft is cleared to descend from an initial altitude until established on a stabilized approach with **best-economy power setting** using **minimum thrust and drag** at all times. Such an arrival is continuously descending, except for the provision to utilize shallow segments to slow aircraft without the need to change thrust settings.*



MITRE –CDA Assessment Task

Definition:

Continuous Descent Arrival: *an arrival where an aircraft is cleared to descend from cruise altitude to final approach using a best-economy power setting (usually identified as flight idle thrust) at all times. Such an arrival is continuously descending, except for the provision of momentary level segments used to slow aircraft without need to change thrust settings (e.g., to meet the 250 knot restriction at 10,000 feet altitude). At final approach, thrust may be added to permit a safe, stabilized approach speed and flap configuration down a glideslope to the runway.*

